

Zishen Qu

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Education

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|-----------|-------|------------------------------------------------------------------------------------------------------------|
| 2022–2027 | PhD | University of Illinois at Urbana-Champaign
Mathematics |
| 2020–2022 | MMath | University of Waterloo
Combinatorics & Optimization
(Advisors: Joseph Cheriyan and Yu-Ru Liu) |
| 2014–2020 | BMath | University of Waterloo
Pure Mathematics and Combinatorics & Optimization |

Publications

2. A. Chaniotis, Z. Qu, and S. Spirkl. *Minimal induced subgraphs of the class of 2-connected non-Hamiltonian wheel-free graphs*. Discrete Mathematics, 2023.
1. J. Cheriyan, S. Hajebi, Z. Qu, and S. Spirkl. *Minimal induced subgraphs of two classes of 2-connected non-Hamiltonian graphs*. Discrete Mathematics, 2022.

Employment

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| 2020 | University of Waterloo , Undergraduate Research Assistant
(Supervisor: Xiaoheng Jerry Wang) |
| 2019 | University of Waterloo , Undergraduate Research Assistant
(Supervisor: Joseph Cheriyan) |
| 2016–2017 | Sunnybrook Health Sciences Centre , Imaging Research |
| 2016 | Environment and Climate Change Canada , Ice Model Research Assistant |

Grants, Awards, and Honours

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| 2022–2025 | NSERC Postgraduate Scholarships – Doctoral (PGS D) |
| 2021 | Sinclair Graduate Scholarship |
| 2020 | NSERC Undergraduate Student Research Award |
| 2019 | NSERC Undergraduate Student Research Award |
| 2014–2019 | Syncrude Higher Education Award Program |
| 2015 | University of Waterloo Merit Scholarship |
| 2014 | Alexander Rutherford High School Achievement Scholarship |

Conferences and Talks

- 2022 8th Czech-Slovak International Symposium on Graph Theory, Combinatorics, Algorithms and Applications, Charles University
Minimal induced subgraphs of two classes of 2-connected non-Hamiltonian graphs
- 2022 Student Number Theory Seminar, University of Waterloo
The Selberg sieve on lattices
- 2022 Graphs and Matroids Seminar, University of Waterloo
Minimal induced subgraphs of two classes of 2-connected non-Hamiltonian graphs
- 2021 Math Circles, University of Waterloo
Sieve Methods in Combinatorics
- 2021 Graduate seminars, University of Waterloo
An Example of an Estimate by Sieve Methods
- 2019 Combinatorial Optimization Reading Group, University of Waterloo
Maximizing non-monotone submodular functions
- 2019 Short Attention Span Mathematics Seminars, University of Waterloo
The Erdős–Szekeres Theorem
- 2019 Spring 2019 Undergraduate Research Program, University of Waterloo
Listing Minimum Capacity (s, t) -Cuts
- 2019 Canadian Undergraduate Mathematics Conference, Queen's University at Kingston
Borel's Proof of the Heine-Borel Theorem
- 2018 Short Attention Span Mathematics Seminars, University of Waterloo
An Approximation Algorithm for the k -centre Problem
- 2018 Combinatorial Optimization Reading Group, University of Waterloo
Local Search Guarantees on Facility Location Problems
- 2018 Short Attention Span Mathematics Seminars, University of Waterloo
The Chromatic Number of Kneser Graphs
- 2018 Canadian Undergraduate Mathematics Conference, University of Saskatchewan
Graph Homomorphisms
- 2018 Short Attention Span Mathematics Seminars, University of Waterloo
Every Graph has a Cycle or Path of Length the Number of Vertices of G or Two Times the Minimum Degree
- 2017 Canadian Undergraduate Mathematics Conference, Université du Québec à Montréal
The Hadamard Conjecture
- 2016 Canadian Undergraduate Mathematics Conference, University of Victoria
The No-three-in-line Problem

Teaching

University of Illinois at Urbana-Champaign

- 2023 Math 231: Calculus II, Teaching Assistant
- 2022 Math 220: Calculus I, Teaching Assistant

University of Waterloo

2022 CO 454 Scheduling, Teaching Assistant
2022 CO 481 Introduction to Quantum Information Processing, Teaching Assistant
2021 CO 487/687 Applied Cryptography, Teaching Assistant
2021 CO 454 Scheduling, Teaching Assistant
2021 CO 250 Introduction to Optimization, Teaching Assistant
2020 CO 227 Introduction to Optimization (Non-Specialist Level), Teaching Assistant

Service

2019 **The Pure Math Club**, President
2018, 2019 **Waterloo Orientation - Math**, Math Orientation Director (Teamster)
2015, 2016, 2017, 2018 *mathNEWS*, Editor